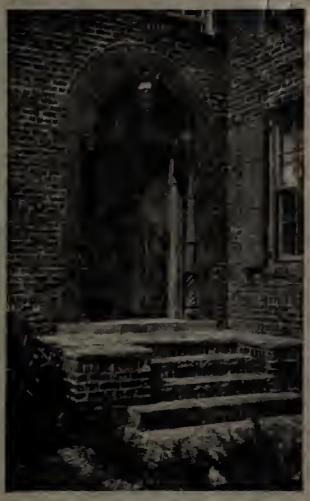
INDUSTRIAL HOUSING



THE BAYONNE
HOUSING CORPORATION
BAYONNE · NEW JERSEY

INDUSTRIAL HOUSING

INDUSTRIAL HOUSING

By

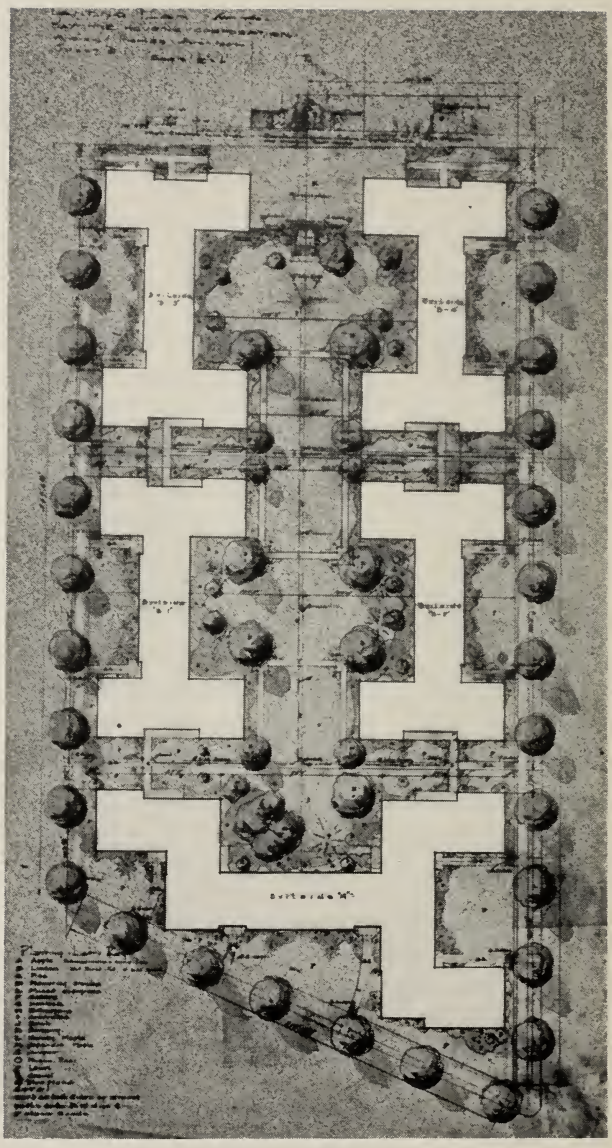
ANDREW J. THOMAS

THE BAYONNE
HOUSING CORPORATION
BAYONNE · NEW JERSEY

First Edition, December, 1925

CURRIER & HARFORD LTD · NEW YORK

CONTENTS



General plan

INTRODUCTION

AT the close of the nineteenth century, the little city of Bayonne, New Jersey, still retained its early character of a residential center. Located on a low, narrow peninsula which extends along the west side of upper New York Harbor it was rather sparsely covered with little individual wood houses, set in the familiar pattern of rectangular streets, laid out in a multitude of long narrow blocks, as nearly alike as possible—the traditional American town. Slowly growing, it was taking its place as a suburb of New York City. For the most part, industry had left it undisturbed. Self-contained and homogeneous, Bayonne had few serious problems.

How industry transforms a city

But the twentieth century brought a profound change. The Aladdins of industry noticed Bayonne's position on the shore line of the Port of New York, remarked the main line of the Central Railroad of New Jersey running along its waterfront, and they saw the big "Hook," a huge tract of low waste land which juts into the harbor opposite Staten Island, along the ship channel into Newark Bay. This combination of transportation routes and undeveloped land meant opportunity. The Aladdins rubbed their magic lamps and behold!—a new Bayonne arose. A collection of huge industrial plants, built by corporations of national and international scope was placed on the Bayonne peninsula, with wharves, avenues, business buildings, schools, churches, institutions and recreational facilities, together with the transportation lines required to serve all this complicated machinery. And lastly, the army of workers arrived, who were to make the machinery go.

In the quick transformation, the Hook section went to the oil companies—the Standard Oil Company of New Jersey, and the Gulf Oil, the Vacuum Oil and the Tidewater Oil Companies, whose tankers could come and go from the wharves at their refineries to all the ports of the world. Manufacturing plants like the International Nickel Company, the American Radiator

Company and the Pacific Borax Company, occupied locations near the railroad tracks. Somewhere near these refineries and factories the workers found housing of the sort offered by the local real estate market.

Bayonne was changed by the genii of industry from one end to the other in its physical aspect, and in its social structure it was changed from top to bottom. Formerly a quiet, residential suburb, it suddenly became busy, heterogeneous, industrial. A familiar story, this coming of industry into an old-fashioned city—so familiar, indeed, that its consequences are not heeded. But it is a process of revolution, and cannot avoid leaving scars.

Industry creates problems in housing

New times bring new problems and housing is one of these. In the picture of industrial expansion, as it exists in the minds of most people, housing does not figure prominently. The need of the wage-earner for a home is assumed to care for itself in the market furnished by the local real estate interests. Although all the resources of finance and of technical skill, driven by a relentless impulse for progress, are marshalled to secure the utmost efficiency of manufacturing plants, of railroads, shipping and other transport, as well as of many types of buildings like banks, warehouses and schools, how much science is used to keep the housing of the people abreast of the times?

The increasing complexity of the times and the steady rise in prices now bear very heavily on housing, and, in cities where industrial expansion takes place, breakdowns in housing production are occurring. It is not so much that new houses for the wage-earners are not built, but that such houses as are built are too expensive and of a low standard. Bayonne furnished one of these examples of housing breakdown.

Such was the local situation in 1917, and a new event arrived to precipitate the crisis. This was the entrance of the United States into the World War.

When war was declared, the business leaders in Bayonne knew that the local housing market could not well take care of the renewed influx of workers which would result from the big contracts for war material which were expected at the Bayonne plants. A small group of men, acting at the instance of the Bayonne Chamber of Commerce, undertook to deal

with the situation in an effective way. This was the special Housing Committee of the Chamber of Commerce, headed by Mr. C. J. Hicks, Executive Assistant to the Chairman and to the President of the Standard Oil Company of New Jersey.

Mr. Hicks took a deep interest in the matter from the first. His first care was to survey the housing situation of the Bayonne workers and then to formulate a program of principles, upon which remedial action should be based. This he did, and the most striking thing about his ideas is, that, notwithstanding the critical nature of the local situation and the war emergency confronting him, he made no concession to expediency, but, instead, set the standards to be embodied in the local housing high above the ordinary. He recognized the essential of low cost, but he also insisted that the highest architectural ideal be attained. Specifically, he urged housing of an "open" plan, having all rooms flooded with daylight, and provided with complete sanitary equipment, set in garden surroundings, with sufficient recreation space. The Committee agreed that the restricted amount of land available in Bayonne made necessary the apartment type rather than detached homes or housing of the row type.

The Bayonne Housing Corporation organized

Mr. Hicks and his associates became deeply interested in the problem because they felt that it was a universal one, and they know that the situation in Bayonne existed to a greater or less extent in countless cities and industrial districts throughout the United States. Any experience, therefore, which would be gained in Bayonne was sure to be valuable elsewhere. The Housing Committee determined to proceed along as broad lines as possible and to reach, if they could, the heart of the problem of industrial housing. Their first practical step was to organize the Bayonne Housing Corporation for the purpose of building houses.

The war ended a few months later, and peace brought new economic disturbances. The post-war readjustments blocked the housing program of Mr. Hicks' committee but, notwithstanding every discouragement, after a long effort, financial backing of about $1,000,000 was secured and the first group of houses was completed in the winter of 1924-25.

These first garden apartments of the Bayonne Housing

Corporation were built as a demonstration of an ideal method of producing wage-earners' housing. In essentials, the ideal is this: a home of five or six rooms and bath and "modern" conveniences, set in a beautiful environment of architecture and gardens; this home to be produced and operated on sound business principles and to be rented to yield a moderate return on the capital invested, and at a figure which the average thrifty wage-earner could reasonably afford to pay. It will be seen that there is no philanthropy in this ideal, but that it has both an economic and social basis.

The instrument created to undertake the enterprise, the Bayonne Housing Corporation, represents national interests among its stockholders who include representatives of corporations having industrial plants in Bayonne, and a few individuals. These corporations are the Standard Oil of New Jersey, Tidewater Oil Company, Vacuum Oil Company, Pacific Borax Company, Babcock & Wilcox Company, The International Nickel Company, Bayonne Supply Co.; and among the individuals are Messrs. John D. Rockefeller, Sr., John D. Rockefeller, Jr., E. S. Harkness, W. M. Cosgrove, of the American Radiator Company and J. E. Johnson, with Mr. George E. Keenen of Bayonne as President of the Housing Corporation. One of the most interested backers of this enterprise was the late J. H. Mahrken, a public-spirited citizen of Bayonne.

Housing based on business principles

From the first the sponsors of the Bayonne Housing Corporation decided that a more rigid application of business methods in housing was needed in order to bring the ideal home which they had in mind within reach of the wage-earner. They knew that houses were being built everywhere in great numbers, especially in smaller centres, but too much of this housing was of inferior types, and was too expensive in both production and operation costs. The expensive character of this new construction served to set an exorbitant level of rent and sale prices, to which the prices of older houses must inevitably rise in the course of a few years. In fact, such a situation had already developed in the metropolitan area of New York City. There, in a number of instances people were paying for the privilege of living in antiquated, depreciated, insanitary, inflammable, dark,

Breaking ground for the Bayonne wage-earners' homes. The Mayor of Bayonne and the officers and directors of the Bayonne Housing Corporation start the work

cheerless "cold water flats," as much as they would pay for the new apartments of the Bayonne Housing Corporation. When the rise in prices of old construction to the level of prices of new construction was finally complete, the wage-earner—even the high-paid one—would find that he could not afford a suitable home. He would accordingly be obliged to accept a reduction in his standard of living.

It was felt that capital, no less than labor, would deplore any reduction in the standard of living of the workers in industry, and the individuals interested in the Bayonne experiment were ready to lend a hand in placing the production of wage-earners' houses on a sounder business basis.

That the particular section of the real estate market which produces wage-earners' housing is careless of the social interest, and that it operates inefficiently, with heavy economic waste in many industrial centres of the country—this is a truth well known to housing experts. The fact is that housing suffers from a somewhat obsolete and primitive business system in which

small-scale methods of operation, heavy overhead, inefficient production, and excessive speculation are the chief causes of failure. From an economic viewpoint, the great need in wage-earners' housing is efficient large-scale production.

The American worker enjoys his present high standard of living because modern business methods have been introduced into the manufacture of his food, his clothes, his household goods, his education, his recreation, even of his luxuries, and there is every reason why the same efficiency should apply in housing, which, next to food, is the largest item in the wage-earner's budget.

The social responsibility

But the cornerstone of housing policy is the social and civic responsibility. The home is more than an ordinary article of trade, to be bought and sold like a cake of soap or a box of cigars; on the contrary, it is a personal thing, in fact the most fundamental institution of civilization. The sponsors of the Bayonne undertaking felt that the most fundamental defect in wage-earners' housing was, that it was produced with too little regard for the social and civic welfare, which, after all, should be the basis of housing policy, and they sought to co-operate with officials, with other public-spirited organizations and citizens, and with labor in setting the standards of housing as high as possible.

The charter of the Bayonne Housing Corporation guarantees the social policy in housing. The Company is in the nature of a public enterprise having the support of the Bayonne Chamber of Commerce, and it solicits the active co-operation of labor, officials, and of public-spirited organizations and citizens in bettering housing standards in their city. It may be termed a capitalist enterprise only to the extent that a large-scale housing corporation involves important business responsibilities which necessarily must be assumed by capital interests. Because of its civic character, the Bayonne Housing Corporation may be said to be an unofficial public service corporation, without possessing the usual franchise privileges or being subject to regulation of its acts by the State in the same way that a public utility is controlled.

This conception of a public-spirited housing corporation which represents all civic interests marks an important advance

Children's playground in New York's "East Side"

on the old idea of "company housing," which, though often inspired by good motives, nevertheless had certain fundamental defects. The chief fault of company housing was, that it superposed the landlord-tenant strife on the capital-labor antagonism, and thus created a combination which has been responsible for some of the most unsavory episodes in American industrial history.

The first group of homes

The principles on which the Bayonne Housing Corporation operates are successfully illustrated in this first group of houses, designed by Andrew J. Thomas, architect, of New York City. In these garden apartments the wage-earner enjoys a home of a much higher standard than the local real estate market offers, and he pays a rental of from two dollars or three to four dollars a room a month less. Specifically, this means the standard home mentioned, a home of four, five or six rooms—including

a bathroom and other modern conveniences, steam heat and hot water supplied by the landlord—in a house which is well planned, soundly constructed, good architecturally, and set in the midst of gardens. This achievement brings within the reach of the higher-paid wage-earner an ideal home of the American standard of living. By thus demonstrating that the better-paid wage-earner can be ideally housed, the ultimate goal in housing, namely, the lower-paid ranks of the population —is brought nearer realization.

The methods which produced this success are treated at length in the following chapters, which explain the economics of industrial housing, the architecture of the garden apartment, and the history of the Bayonne Housing Corporation.

CHAPTER I

Economics of Industrial Housing

THE economic factor is the main obstacle in industrial housing. The heart of the problem lies in the disproportionate increase in the cost of housing as compared with the general level of commodity prices and wages. As a result of this maladjustment, the average thrifty wage-earner can scarcely afford a suitable home.

What has caused housing costs to soar? As mentioned in the introductory chapter, the cause will be found, not in circumstances which are beyond control, but rather in the inefficiency and disorganization of the housing industry itself. The removal of this inefficiency is the immediate purpose of contemporary housing technique, which has for its ultimate goal architectural and social progress.

Economics, therefore, is fundamental in industrial housing. Housing economics is an extremely complex subject, and is involved deeply in the technique of housing architecture. It is generally misunderstood, perhaps because the housing industry is divided into many parts—into finance, real estate, city planning, architecture, contracting, house furnishings, real estate management and household operation—so that housing is usually looked upon from the point of view of one or two of these many, often conflicting, interests, and rarely is it considered as a whole. As might be expected, when any one group in housing seeks to advance, the contribution which it makes to progress is either unimportant or else is blocked by inertia in other quarters.

The effect of the new housing architecture

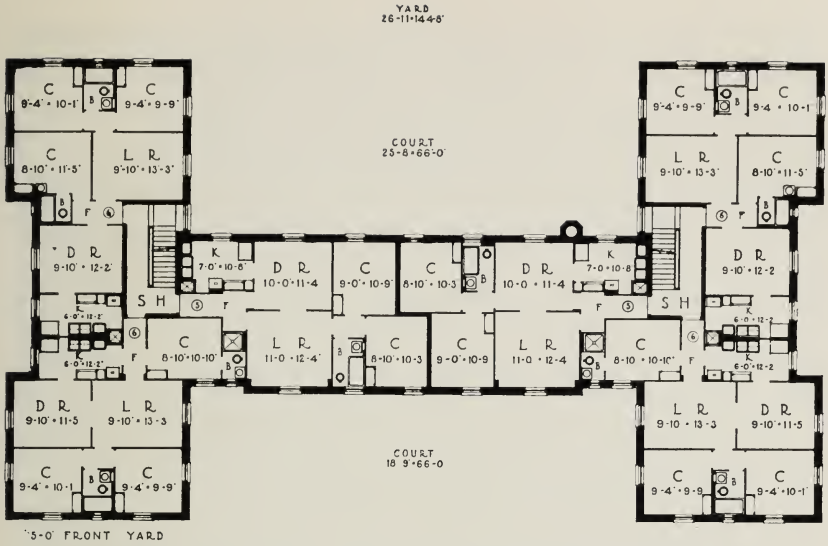
Notwithstanding this disorganization, there has been a steady improvement in housing design, particularly since the World War. During the time that housing costs were rising, architects have given their best efforts to improve housing

architecture and they have finally succeeded in perfecting a home for the American wage-earner which in all respects measures up to his standard of living, the highest in the world. This technical achievement introduces a new factor into the situation. As compared with the older models of the speculative builders, the superior economy, efficiency, convenience, fire-safety and beauty of the new architectural types should create a revolution in industry besides which the changes wrought by the automobile seem slight in comparison. One may safely assert that, had the new housing architecture, which includes the new system of site-and-town planning based upon it, been perfected ten years ago, so that it could have been introduced at the same price level on which the older types were produced, it would already have begun to transform the entire physical aspect of American industrial districts. Housing blocks, neighborhoods, towns, whole districts, would be covered with better homes and gardens, interspersed with playgrounds, parks and open spaces.

The social transformation would be no less profound. For, in such an environment, life would be fuller, finer and more reasonable, and democracy, for the first time since the days of the beautiful old towns of the Early Republic, would again be on the way to having a setting worthy of it.

The contrast of slums

To draw such an ideal picture seems an odd way of beginning a discussion of economics. Nevertheless, the subject of housing economics is so intricate and so generally misunderstood that it easily loses point unless it is illustrated in a clear picture which we may keep before our eyes, revealing the vision of the future, when intelligence, organization and imagination are at last brought widespread into housing. Nor will this ideal painting alone suffice. If we are to grasp its meaning to the full we must have another picture to place beside the first one which will show, by contrast, the present lack of leadership and of statesmanship and the resulting disorganization, from which issue huge social and economic waste and the demoralization of slums. This latter is the picture of the outward tenements of New York City and of the ramshackle wooden houses of other cities. By comparing these two pictures one sees which way progress lies.



Floor plan of typical building of the Bayonne housing

The factors of high cost

It is necessary to understand the tangle of economic and human factors which has caused the existing situation in industrial housing. In dissecting the corpse of the housing industry, we soon find, as already stated, that high prices was the disease which killed the patient. Everything that enters into the cost of a home—land, site utilities, building construction, finance, taxes, municipal assessments, household furnishings, maintenance, operation of the completed home—has enormously increased in price. Over the last generation, in nearly all items this increase is over one-half, and in many cases it is double or even triple. The popular impression is that the change in economic conditions after the World War was the cause of the unprecedented increase, but the truth seems to be that the war only served to bring to a head a crisis which had been slowly gathering force for many years. Housing costs have risen, but so have wages, and it is claimed by some students that the wage-earner was not much better off before the war than after it. There are some pitfalls in this claim, as will be pointed out, but it is to a large degree true. At any rate, there is little hope of solving the problem of high costs in housing by

merely waiting until the economic readjustment, which is now taking place after the war, is completed. America must tackle the situation in a more fundamental manner. America must reorganize her industrial housing industry. This means that first there must be a thorough understanding of conditions in the housing industry, and of its organization and methods of operation. This knowledge will form a basis for reorganization.

The place of housing in American history

The key to the puzzle of the housing industry lies in understanding its place in the economic history of the American nation. Housing has always been intimately related to the real estate exploitation of a continent. This exploitation has made housing a small-scale business, individualistic, very loosely organized and highly speculative. Its roots reach down to pioneer economics, back to the days when each householder built his home in a clearing, cutting down the trees of the forest for building materials. As towns and cities developed, the primitive method of the frontier soon gave place to a system of division of functions and of responsibilities. In this more specialized system the local real estate sub-divider, the small capitalist investor and speculator, and the local builder, banker and lawyer, each had a part. The same system prevails to-day in most parts of the United States with but slight modification. Its method of operation is common knowledge and needs no description here. In fact, people are so accustomed to it that they overlook its defects.

In the latter part of the nineteenth century efforts were made to give to this small-scale local system the benefit of large-scale finance. Capitalists organized the large mortgage companies, and the huge insurance companies like the Metropolitan Life Insurance Company and the Prudential Life, which invested a part of their funds in mortgages. The workingman himself developed the extensive system of building loan societies, for the sole purpose of financing his own home. In this connection one may also mention the growth of large industries in the manufacture of building materials.

The introduction of these large-scale factors, however, although they were steps in the right direction, could not correct the fundamental defects of the system. The large mortgage companies found it more profitable to make loans on large

building operations; the building loan associations, although stimulating the production of small homes in many districts, did not use their financial power to influence an improvement in housing technique and architecture, nor did they promote large-scale methods of production; and, in consequence, the economy of large-scale production of building materials was somewhat nullified.

Despite its grave defects, however, this system undoubtedly did function with fair success in many parts of the country. In many districts, particularly in the very smallest towns and villages, thrifty, well-paid wage-earners could obtain a home of four, five or six rooms and bathroom, with "modern" conveniences of heating and plumbing, at a price which they could afford to pay. In this way were built those millions of little homes which dot the industrial map of the United States. These houses are the familiar single houses, mostly wooden, or those other well-known types, the two-family houses, the brick row houses of the cities, known as the "Philadelphia" row house, and the New England frame "three-decker."

Weaknesses in housing production

"But," it may be asked, "how could this system of producing wage-earners' homes be wrong, if it provided homes by the millions?" The answer is that the system was wrong, first, because the architecture of the homes was usually inferior; secondly, the system could not minister to the lower-paid ranks as a general rule; and thirdly, because such success as the system did achieve in housing well-paid workers was due to certain favorable economic conditions in the nineteenth century, which for a long period offset the disadvantages of inefficient, small-scale, disorganized and speculative production, which were rooted in the housing business. Moreover—here is the point of it all—when these favorable economic factors gradually ceased to operate, the inherent weaknesses in the system came out. The result of the change is now apparent. The system on which the wage-earner had come to rely for supplying his home is failing him.

What were these favorable elements which enabled the obsolete system of producing wage-earners' homes to last so long? In general, they were exceptionally low costs of land, labor, building materials, transportation, and of taxes and finance.

Feature in rear wall of comfort station

These were advantages which dated from pioneer times and they belonged to the period of extensive economics, which coincided with the development of the United States and its earlier industrial expansion. They lasted until well into the twentieth century.

The factor of land value

But to-day these differentials are disappearing rapidly. Land, which, when the country was being settled and when our big industrial centres were being founded, could be had at almost nominal cost, is now scarce and, in most districts, is very high priced. The influx of population from the countrysides into the cities has brought about the rapid industrial expansion of the last fifty years, and has caused a tremendous speculation in urban lands, which is reflected in inflated prices. The studies made of the increase in land values in the new industrial cities of Gary and Lackawanna, and the history of certain tracts of land in New York City, illustrate, in a striking way, how great this increase is.

The introduction of the structural steel frame and the elevator, coupled with the development of high-speed transportation, are other factors which have contributed to the rise in the value of city land. They have immensely increased the possibility of deriving income from real estate, and have worked to raise the value of land, which depends on the income that can be obtained from it. As a result of this more intensive use of land, the buyer of a home site is apt to find that the future growth of the city has been heavily discounted, even in the prices of outlying land; and, to a certain degree, he must outbid the promoter who is seeking a location for a larger building. Zoning is offered as a solution of the problem presented by the rise in prices of city lands in anticipation of more intensive commercial uses: i. e., by forbidding business and industry to enter residence districts, their land values are kept down. This remedy, however, does not reach the important factor of the increased cost of public improvements.

Factor of public improvements

Even worse, the prospective home-builder discovers that the increased cost of municipal improvements of paving, sanitation and water supply, and of the public services, such as gas and

electricity, which has been particularly large since the war, is also heavily reflected in the price of land, and in taxes and assessments. The experience of the United States Housing Corporation during the war is instructive. This and other cases lead the New York State Commission of Housing and Regional Planning to declare that the cost of public improvements is at least three times that of "raw"—or unimproved—land.

Factor of land utilization

Crude and wasteful methods of utilizing—or of sub-dividing land, as it is called—are a further heavy drain on the home-owner's resources, whether in the cost of procuring or of operating his home. This waste in land sub-division has received much attention in recent years from architects, who have pointed out that the customary methods of plotting home sites usually require an excessive proportion of space to be given over to streets (which are extremely expensive) as compared with that allotted to housing locations; and that, furthermore, the custom of laying out a street system long in advance of the buildings piles up heavy carrying charges on the costly municipal improvements and public services in the street, which lie idle, often for years. The overhead on this heavy waste in street construction and on the premature development of street systems increases the cost of taxes and assessments, as well as the rates for water, gas and electricity; and it also accumulates as carrying charges on the land.

The influence of these various factors which enter into the cost of land are now being subjected to scientific study. They are brought up to date in the 1925 report of the New York State Commission of Housing and Regional Planning in elaborate detail. The Committee on Community Planning of the American Institute of Architects, in their admirable 1925 report, also deals exhaustively with this huge economic waste, and concludes that it can only be stopped by sound community planning. The Committee's report offers a typical example of the waste in streets, showing how, in a tract of 580 acres, in which 190 acres, or 32.8%, are devoted to streets as laid out in the customary way, this high percentage could be reduced by proper design to 23⅓%, effecting thus a saving of 55 acres or nearly 10%, and, at the same time, providing a more efficient and attractive arrangement of home sites.

Construction costs

Coming now to construction costs, the higher wages at present paid in the building trades is a well-known fact and needs but little illustration here. In New York City, in 1913, carpenters received $4.50; bricklayers, $6.00; plumbers, $5.50; helpers and laborers, from $2.25 to $3.50 a day, while in 1923 the figures were $10.00, $12.00, $10.00, and from $6.00, to $8.00, respectively. This is to say nothing of the bonuses paid in some trades, reaching as high as $4.00 for masons, plasterers and tilesetters. Although existing rates of wages may be lower in the future, there is small chance of a return to the older relationships. The restriction of immigration has reduced the supply of labor and the competition caused by the steady, less dangerous employment at high wages which is now offered in the factories requires a higher level of reward if American youth are to be attracted into the building industry.

Building materials have not risen in price as much as has labor, but they are, nevertheless, in most cases from 50% to 100% or more above pre-war level. We are now doubtless on a permanently much higher price level than in 1913. At that time, because of disorganization and over-expansion, the materials industry was operating either with little profit or else at a loss. To-day, the higher wages paid for unskilled and semi-skilled labor, together with the higher freight rates on railroad, ship and truck—all these factors more than offset any economies which may have been gained through the improvement in methods of mill-production of many important building materials such as steel, lumber, plaster and the metal products.

But the most important factor by far in the low cost of housing construction during the development period of the United States has been cheap lumber. It was cheap lumber, cut by low-priced labor from land of little or no value, and transported at small cost to the home site, which made possible the colossal production of wage-earners' homes in the nineteenth century. But now this tremendous advantage is passing, probably never to return. The cutting away of the forests, together with high wages, higher freight rates and the higher cost of depreciation of timber construction, are putting an end to the superior economy of wood over the other building materials.

Summarizing the result of the increase in building costs, it

may be stated that a workingman's home costs nearly double to construct in 1925 as compared with 1913.

Cost of house furnishings

Incidentally, it should be pointed out that household furnishings are no small item in the cost of a home. Their price record in the eyes of the home-owner has little to commend it. They have risen in price much more than have building materials.

Finance is the heaviest cost

But important as are these well-known factors of land, municipal and site improvements, building construction and house furnishings, it is a striking fact that they do not influence housing costs to nearly the same extent as does the cost of finance. What makes a workingman's home almost prohibitive to-day is the price paid for the capital employed in building the house. More capital is required to-day than formerly, and is paid for at a higher rate. Since the capital is usually employed in a small-scale speculative venture, the investor naturally requires a high return on his money.

Whereas formerly the small home could be financed in the real estate market at an average rate of about six or seven per cent in New York City, to-day, according to the New York State Commission of Housing and Regional Planning, the capital used in tenements in New York State at present "costs on an average of from eight and one-half to ten per cent for interest without making allowance for the initial costs of securing a loan. In the case of small loans on single-family houses the percentage loaned on first mortage is rather lower, frequently as low as forty to forty-five per cent, and the average interest rate is consequently somewhat higher because of the increased proportion of junior mortgages." The "initial costs" referred to cover commissions, bonuses, discounts, legal fees and other charges on the various mortgages and building loans. In other parts of the United States even higher figures are reported. The effect of this increase is, roughly speaking, that the small home-owner needs at least double the capital to-day that he formerly required, and pays for the use of it at a rate about half as much again; that is, for every $100 capital for which formerly he paid $6 or $7 interest, he now requires $200 and pays $17 to $20 or more for it.

Rear view of a New York tenement

The effect of interest rates on rentals

To show what the effect of interest rates on rentals is, the cost of housing of sound, permanent construction as built by the speculator in the northeastern part of the United States to-day may be taken at $1200 a room. A reduction of one per cent on the interest rate on this housing equals exactly one dollar a room a month. The effect of interest rates on housing was shown in an exhaustive study of tenement house finance by Andrew J. Thomas, in a pamphlet, "Garden Apartments to Replace Slums" (1924). Similar figures are published in the 1925 report of the New York State Commission of Housing and Regional Planning.

Mechanical equipment and woman's labor

Another factor in the cost of producing housing is the effect of the gradual rise in the standard of living of the American people since the Civil War. The claim has been made, especially

in real estate circles, that, if the wage-earner would be willing to return to the home of his forefathers, where he enjoyed plenty of space, but had less elaborate plumbing, heating and electric equipment and appliances—what are popularly known as "modern conveniences"—he could once again be economically housed. Some critics cite the fact that even to-day most American farm houses lack mechanical improvements. In other words (it is claimed) what makes wage-earners' housing expensive is the cost of luxuries, not of necessities.

There is just enough truth in this claim to make it plausible, but it will not stand analysis. If one separates the cost of mechanical services and of equipment into that part which lies outside the house and that which lies inside, he will have a clearer idea of the situation. As regards the cost of the various municipal improvements and public services outside the house itself, and the effect on the cost of land, their importance has already been pointed out. But these site utilities cannot possibly be eliminated. The biggest item is plumbing, which is no luxury but a sanitary essential, required in order to maintain health in crowded centers. We can hardly expect to return to the time-honored well, cistern and cesspool, even if we made a saving thereby, which is doubtful. In respect to the cost of gas, gas is replacing coal as being more economical. Electricity is too slight a factor in the cost of housing to be troublesome.

Inside the house, the question of modern conveniences resolves itself into the difference between the "cold-water" home and a home with well-equipped bathroom and kitchen; between a home heated by a number of stoves and fireplaces as compared with a single heater. As regards the expense of the additional plumbing, any plumber knows that the additional cost of a few feet of hot water lines and of a bathtub and lavatory will be hardly more than one per cent of the construction cost of the house; and the housewife will tell you that they will be cheaper than the cost of the washstands and china which would replace them. And, as far as heating is concerned, there is little economy in a multiplication of stoves, fireplaces and chimneys. It may be said further that the concentration of plumbing and heating appliances in the modern home saves floor space and building volume.

But the main point, of course, in the whole question of mechanical conveniences inside the house is that they, with good planning, save the woman's labor. They release much of

her energy for the more responsible work of managing the home and of training and educating her family. In fact, this efficiency of the housewife's labor is the foundation of modern teaching in household economics; and housekeeping experts, in leading the revolt against the operating and mechanical side of the homes of our forefathers, have termed them "woman-killers."

Legal and structural requirements

Finally, as regards the first cost of the high standards of construction set by architects, this cannot be avoided in these days of mounting costs of maintenance, repairs and insurance. These charges can be met only by durable and by more fire-safe construction. Authorities place the "life" of the little frame speculators' houses which have been built by the mile since the war at hardly more than ten years. Surely, there is little economy in such temporary construction.

Another cause of heavy expense, however, comes in the unnecessary restrictions which are placed by building and sanitary laws on house construction. The fact is, that in many districts of the United States, these laws are unscientifically drawn—"Procrustean," the Committee on Community Planning of the American Institute of Architects terms them. They are deplorably lax in some respects, particularly in failing to enforce reasonable standards of planning, construction and fire-safety; and they are needlessly severe in others, penalizing sound construction both technically and financially.

The Bayonne housing suffered from these legal abuses, and the construction of this first group was delayed several months until the Tenement House Law of New Jersey and the Bayonne Building Code could be amended in the spring of 1924. These changes in the laws effected a saving of at least five per cent on the cost of construction of the buildings. Incidentally, the Tenement House Act of New Jersey was strengthened in its provisions enforcing fire-safe stairways, the lack of which is the chief cause of the terrible loss of life in the frequent tenement house fires.

Cost of operating a home

All these factors relate chiefly to the cost of producing a home. Unfortunately, when the wage-earner assumes the cost

of operation he has the same sad experience. Needless to say his carrying charges are heavier than a generation ago, reflecting the higher prices of land, utilities, construction and finance. Worse still, interest charges, which form about one-half of the current expenses, are far higher, as pointed out above. Depreciation, which involves repairs, is higher, because repairs are chiefly an item of skilled labor. Taxes, whether national, state, county, or municipal, are excessive. As an illustration of the importance of this tax factor in housing, in the "$9.00 a month a room" garden tenements of the Metropolitan Life Insurance Company in New York City, completed in 1924, the exemption from municipal taxation alone for a period of nine years is figured to be worth at least $1.50 a month a room on the rental; whereas in Bayonne, out of every $10.00 rental paid by the tenant, approximately $2.50 goes into taxes of every sort. Other items of operation cost are the mounting figures of depreciation on house furnishings, and the higher prices for fuel and supplies.

The wage-earner's income

The foregoing pages of this chapter on housing economics have had to do with the prices which the wage-earner pays for housing. But how about his income? Can the wage-earner's budget bear the charge for the normal items of housing expenditure?

In answering this question, the writer does not intend to lead the reader through the usual discussion of rentals versus wages which adorns housing literature. Already too many futile pages have been written on that factor. Nevertheless, it furnishes the key to the finances of any housing enterprise, and it should be understood.

The difficulty with the whole question of the place of housing expenditure in the family budget of a wage-earner is, that it deals with a complicated and endlessly varying set of factors, which are apt to defy generalization. Consequently, in a specific case, the practice of drawing conclusions as to wages, and as to the proportion of wages to be spent for rentals, is apt to lead to exaggeration or to error.

Particularly unfortunate is the practice of basing allowances for rentals on statistics of average factory wages. In a given case, this method may result in setting too low the amount of money in a wage-earner's family which is available for housing

expenditure. Factory wages vary greatly in different occupations, and, from the angle of housing finance, the average in any occupation may be lowered because the statistics of factory wages include the large numbers of very youthful employees of both sexes who are not to be classed as home providers. Furthermore, outside the ranks of factory workers lie certain classes of very highly paid wage-earners, such as the mechanics in the building trades.

Looking at the other side of the picture—that of the lower paid workers—outside the factory classification are the clerical workers, the "white collar class," the government employees, such as policemen, postmen, firemen, street-cleaners, who are in many cases less well-paid than the semi-skilled, or even the unskilled.

Equally important is the fact of considerable variation in income between members of each wage group. After all, the family is the unit in housing, financially or otherwise, and the income of the family may be larger than the wages of the head. In these days when both sexes work, there are often more than one wage-earner in the family. Also, a family may enjoy additional income from savings, from investment in securities or real estate, from inheritance, or from the custom of taking boarders into the home. Clearly, the discrepancy between family income and the wages may be great, and may vary greatly as between families in the same wage group. For this reason it is family budget, not the wage, which is the true index in housing finance.

Equally misleading are those generalizations regarding "the percentage of his wages that a workingman may be expected to pay for rent." How about the prices of the other items in the family budget in a given locality? How about the number of children in a family, and the age of the children, and the expense of rearing and educating them?

All this on the income side. But equally treacherous may be the rent statistics when taken as indices of housing expenditure. As a single illustration, in the case of each individual family there is the question of who pays for the heat and hot water, the landlord or the tenant? Here are two items alone which may equal as much as $2 a room a month in the northern part of the United States, but which may or may not appear in the rental, according as to whether the home is in an individual or row house, a two-family house, a "cold-water flat,"

Vista through the block between buildings

or an apartment with "modern" conveniences. Clearly, the possible error in this item of heat and hot water, amounting to as much as twenty-five per cent in some cases, will invalidate most statistics of rentals. Incidentally, this error has operated to obscure in the minds of most housing experts the superior economy of the apartment house. They see the row house or two-family house renting often as low as the apartment, but they forget that in one case the tenant pays the fuel item, while in the other the landlord pays it. Repairs are another item of housing expenditure which may or may not appear in rentals.

All these variations in family budget, in items of housing expenditure, and in the relation of housing expenditure to the family budget, demonstrate the pitfalls which occur in the usual generalizations as to rentals and wages. But they should not be allowed to obscure the truth. The one essential fact which stands out clearly in the situation is this, that the traditional methods of housing production have for several decades at least failed to house acceptably all but the more prosperous wage-earners' families in most industrial districts of the United States.

In deciding the housing policy for a specific locality or for a single housing enterprise in respect to rentals and to the number of rooms to be provided, there should be no great difficulty in steering between the variations in different wage groups and in individual families, which seem to conflict. The fact is, that for some time to come, it will be possible to care for the needs of only the more prosperous wage-earners. In almost any industrial district, new low-priced housing of the right kind will not go begging for occupants. And any local group of citizens, desiring to intrust themselves in housing the workers properly, can scarcely expect to do more in the beginning than to establish a local demonstration of sound housing, which will point the way to future progress, and thus set a standard for their district to follow. In accomplishing this necessary and most important task, the way may be opened to reach, little by little, the lower-paid ranks.

As one drops down the economic scale the present failure to properly house the wage-earner becomes more striking. For the family of the semi-skilled worker, for the factory worker's family whose income is hardly larger than average factory wage, for the lower-paid ranks of the "white collar" worker and of the government employee, decent housing in new construction is scarcely to be had to-day anywhere. And as for the housing

problem of the unskilled worker, married and with a normal-sized family, it may be a long time indeed before he can be provided for.

The wreck of the housing industry

With the recital of the high prices of nearly all the things which enter into the cost of a wage-earner's home, and of the overwhelming burden which is placed in consequence on the budget of the wage-earner, this painful summary of the high cost of a wage-earner's home ends. The account shows clearly how economic changes have gradually wiped out those differentials of low prices of land, of municipal and site utilities, of construction, finance, taxes and maintenance, which have enabled the traditional real estate system of producing industrial housing to function with some success in certain parts of the United States. Now, however, with the support of these differentials removed, the inherent weakness of the system—its small-scale, inefficient, speculative and loose organization—are causing it to break down.

The consequence of failure: slums

The effect of this breakdown was pictured in the beginning of this chapter, and perhaps the reader will now agree that it was not overdrawn. It is a picture of a reduced standard of living for the nation's workers, of present and future slums. It springs from the colossal economic waste in land, in municipal and private construction, the cost of which accumulates until it becomes a crushing burden on housing. This burden is further weighted with an excessive load of charges for speculative financing.

Deterioration in architecture

How can the wage-earner, even the fairly prosperous individual, be expected to carry this burden? Of course he cannot. He is helpless in the face of the relentless operation of factors which he, as an individual, cannot control. He finds it impossible to stop the process of deterioration in his home conditions which inevitably sets in. First, he sees sound architectural standards

sabotaged. Then he discovers that the land which is required for daylight, out-door air and for garden and recreation space, is sacrificed to buildings. The buildings are then crowded too close together or are not separated at all. They are built higher. Courts and yards become so constricted that daylight scarcely penetrates his home. The home-owner finds that even that prime necessity of life, access to outdoor air, is denied him.

But this process of physical shrinkage continues. Next it attacks the human values. The standard six-room and five-room apartment shrinks to four rooms, then to three. Sanitary conveniences are next eliminated. The fire hazard becomes always graver. At the same time the costs are always mounting and, despite these sacrifices of daylight, comfort, sanitation and safety, the workingman's budget will not afford even the three room home of shoddy inflammable construction, ill-planned, insanitary, gloomy. So he "doubles up." Outsiders—relatives, friends, strangers, even another family—are brought in to share his home. He now lives in a perfect slum. *And he pays for that slum about as much as he would for a home in the Bayonne garden apartments.*

Be it understood that this picture is not exaggerated. It is a photograph of actual conditions as they are developing in New York City and other congested cities. The testimony on this fact is overwhelming, and is verified by many authorities. And what is happening in these crowded centers must surely take place in other industrial towns and cities in the next few years. In most districts, it is only the plentiful supply of old houses which maintains the rents at a manageable level. But sooner or later the rents in old construction will rise to the level of those in new construction, and, when that happens, the cycle of economic changes which New York City has experienced will be completed in other centers. They, too, will have their slums —square miles of them, in vast "blighted" districts.

The counsel of failure

One of the most unfortunate features in the whole situation in housing is the insidious undermining of human judgment which has taken place in the process. Housing is so complicated a subject, and so new is the technique which has been developed to deal with it, that responsible people do not understand what has happened. Few have visualized the slow change in eco-

nomic conditions, and still fewer have pictured its effects. They do not perceive the economic and human waste in housing. As a result, some people have even come to regard as luxuries these necessities of daylight, garden and recreation space, sanitation and sound architecture. They preach, in one way or another, a reconcilement to slum conditions. But this is a gospel of despair.

Success found at Bayonne

This brings us squarely up before the question: what should be done? Obviously, the answer is: develop a sounder system of producing housing. This is the purpose of the experiment which the Bayonne Housing Corporation is now engaged in.

When expressed in economic terms, the ideal of the Bayonne Housing Corporation is the maximum business efficiency applied to raise the social and architectural standards of housing as high as possible. This ideal has been realized to the extent that the Bayonne Housing Corporation has provided housing at a much lower rental than is found in new construction in the ordinary real estate market. This rental is within the means of the better paid wage-earner, and, be it noted, includes steam heat and hot water. The stockholders have provided all necessary funds in return for common stock on which only 5% dividends are expected. The project does not carry the burden of either a mortgage or preferred stock. The Bayonne housing, moreover, is of a higher architectural standard than has hitherto been thought possible for the rentals, even if one considers the epoch-making achievement of the Metropolitan Life Insurance Company in its great project of model tenements housing 2,125 families, which was completed in 1924.

It should be emphasized that the experiment of this first group had, however, distinct limitations, in that a number of the biggest factors which enter into housing costs could not be controlled, except in the traditional manner. These were taxes, rates of labor, prices of materials, and the traditional system of land subdivision, which obtains in Bayonne as elsewhere. Only two of the biggest items were dealt with to the full in accordance with the principles of business efficiency. These were architecture and finance. The surprising success which was obtained from the proper control of these two factors, of housing costs alone, holds out promise of great future progress when the remaining cost factors in their turn are placed on a sound

basis. When that occurs, it should be possible to house the American wage-earner better than ever before. The success of the Bayonne experiment renews the hope of providing good housing for the less prosperous families of the population. Then, of our two pictures, the one of slums and the other of ideal garden homes, only the ideal garden homes will remain.

The great center garden in wage-earners' homes at Bayonne

CHAPTER II

The Garden Apartment

THE garden apartment was chosen by the Bayonne Housing Corporation as the type of architecture most suited to wage-earners' housing. Its chief advantages are: economy in production and in operating costs, and in the housewife's labor, convenience of living, and beautiful environment of architecture, garden, and playground. These factors give the wage-earner a home of a far higher standard of living than he can obtain in other housing types.

Economy, of course, is the basis of industrial housing, and there are several reasons for the superior economy of the garden apartment. By grouping several families, one above the other, on the land, it conserves land together with the cost of the municipal services and of the public utilities outside the house itself, which, as explained in the previous chapter, have so heavily increased the cost of a wage-earner's home. As an illustration of this truth, the cost of the assessment for street paving between curbs per family housed in the Bayonne group is approximately $39, as compared with $112 if row houses of sixteen-foot frontage each were built, or as compared with $210 for single houses of thirty-foot frontage.

The garden apartment is more economical than other housing types in building construction because it has a lower cost per family housed. This is because the cost of roof, foundations, cellar, and stairway construction, and of the plumbing, heating and electric installations are spread over several families instead of one or two. This fact scarcely needs illustration. And even if the construction of the apartment is heavier than that of small dwellings, its more substantial character gives to it the advantages of lower depreciation and less fire risk. As pointed out in the previous chapter, one of the main causes of slums is the depreciation on the light, jerry construction of the average workingman's home. The Bayonne housing, on the contrary, embodies the soundest standards of construction, and its workmanship is of the best.

Kitchen in a wage-earner's garden apartment

The co-operation of labor

This excellent workmanship is due largely to the co-operation of labor. Bayonne is a difficult city for building construction, since its inaccessiblity from New York City and from other New Jersey centers makes it unattractive to workers in the building trades. In order to induce men to come to Bayonne, it was necessary to pay bonuses to the building craftsmen in certain trades, to cover the cost of their transportation from other cities to Bayonne. As an example, the masons received $14 a day. Notwithstanding these premiums, even higher rates were offered by contractors who were bidding for labor at the height of the building boom. A serious situation developed in the Bayonne housing, which threatened to wreck the project. The architect stepped in, and, at a meeting held at the site of the buildings with several labor leaders present, he made a personal appeal to the workmen to remain at their tasks. He told them how the sponsors of the undertaking were making an experiment to prove that ideal housing could be brought within reach of the workers. Such a demonstration, said Mr. Thomas, meant everything to the welfare of all American labor, and the experiment would fail if the Bayonne Housing Corporation were compelled to pay extravagant wages. The workmen heeded the architect's appeal and, almost without exception, they stuck to their jobs, and gave their best efforts to produce. Labor, therefore, deserves a full share of credit for the success of the undertaking.

Construction and finish

In construction, the exterior of the buildings is masonry walls, built of hollow tile with outside facing of brick. This construction is more economical than solid brick walls, on account of the air spaces in the tile which do away with the necessity of forming air spaces by furring the walls. The walls were dampproofed on the inside and the plastering applied direct to the masonry. As noted previously, non-fireproof stairs are the cause of a shocking loss of life in tenement house fires, but in Bayonne the stairways, as well as the dumbwaiters, are of fire-resisting construction, the first floor is fireproof, and firewalls divide each building in the centre. Otherwise, the construction is timber for floors, roofs and interior walls and partitions. The

Exterior of group—garden apartments

roof is flat; having a covering of several layers of tar and roofing felt, with copper metalwork used for skylights, flashings and ventilators. This construction reduces substantially the hazard to life by fire, as exemplified by the experience of the "New-law" tenements in New York City, where, in a quarter of a century's experience in thousands of buildings, scarcely a single life has so far been lost by fire.

In the interior, the finish is substantial and attractive. The floors are double thickness, the top or finished flooring being of oak throughout the apartments, except in the bathrooms and

the Bayonne Housing Corporation

shower-bathrooms, where it is tile. The walls and ceilings are generally three-coat gypsum plaster on wood lath. Exceptions to this rule are the bathrooms and shower-bathrooms, where a special lath is used; and the stairways and entrance halls and vestibules, where the walls are faced with a golden tapestry brick which, with the green-and-purple split-face slate floors and hand-surfaced oak entrance doors, makes an attractive entrance and at the same time reduces upkeep at points where upkeep is heaviest. The trim in stairhalls and around the dumbwaiters is kalamein, and elsewhere in the apartments it is

wood. Both trim and walls are heavily painted. The stairs are steel, with wearing surfaces of heavy slate.

Mechanical equipment

The mechanical equipment of the housing is most substantial and durable. The plumbing lines are wrought iron, using brass piping at the fixtures, which latter are of a very durable character. Hot water is supplied to the apartments from a coal heater and storage tank located in the cellar of each building. Each bathroom is completely equipped with lavatory, built-in tub and toilet having a flushometer valve; and each kitchen has a sink with drainboard and swinging spout, a pair of washtrays, a dresser, a pot and broom closet, and a two-chambered refrigerator. The heating is a single-pipe steam system, the heat generated by a boiler in each building. The principal rooms are heated by radiators, with heating risers used elsewhere. The hardware and lighting fixtures are simple and substantial. In all respects the interior is cheerful, homelike and in good taste.

One most progressive feature is the provision which has been made for drying laundry on the roofs of the buildings. Racks for hanging clothes and platforms are provided, and the dumbwaiters are carried up to the roofs. In the Bayonne housing the rear of the apartments will not be disfigured with draped lines of laundry in the usual fashion.

The advance in planning

But, however striking may be the economy of the Bayonne housing, and the progress made in living standards, the biggest advantage of all is the plan. As compared with other types of apartment houses, particularly the kind usually produced by the speculative builder, these garden apartments show a saving in floor space per family housed of a fifth to a quarter at least. A study of the plan of the typical H-shaped building in the Bayonne housing reveals an almost entire absence of non-rent paying space in the form of corridors and halls. But, even more important is the elimination of waste volume in the rooms themselves. There is scarcely any variation in the sizes of the rooms of each type—living rooms, bedrooms, kitchens, baths. The sizes have been fixed for the type as being ample for good living conditions and no increase over these sizes has been

allowed, since that would have meant increased cost and higher rentals. Such relentless "boiling out" of wasted volume is imperative in housing design. A long, tedious process it is, and its great value can be demonstrated only by a thorough statistical analysis comparing the Bayonne plan with that used by the average speculator. It should be understood that every cubic foot of volume cut out of a building means a saving of 30 cents or more in construction cost, as well as an additional saving thereafter of 2½ to 3 cents each year in carrying charges and in upkeep.

Comparison with one-family and row housing types

A discussion of the type of housing chosen for Bayonne should include a comparison of its economy with that of the other types of very small houses. This comparison is desirable because there is a school of housing experts in the United States and England which is fixed in its opposition to the apartment, preferring the single-family and row housing types or their variations. Recently, however, this school has begun to turn away from the single-family house as a result of the discovery that it is too expensive in land and in municipal utilities. The report of the New York State Commission of Housing and Regional Planning for 1925 is explicit on this point. It cites the experience of the United States Housing Corporation (p. 57) to the effect that the average cost of a lot of 4,200 sq. ft. in housing built for 21,000 wage-earners' families during the World War just about equalled the cost of a room in the house itself. The New York report refers to the little houses which are now being built on unpaved streets in the outskirts of New York cities, and adds, (p. 60): "It is doubtful if these areas, as free standing single-family neighborhoods, can ever be served with modern utilities unless they are subsidized in part from the general taxes paid by the more intensively used sections." In other words, the single-family house, because of its higher cost in land and public utilities and also because of its greater construction cost, is becoming uneconomic for the average wage-earner in most localities.

The single-family house having proved impracticable, the opponents of the apartment house are now pinning their faith on the row house, generally of the Philadelphia type. They assert that the row house is more economical of land and public

A Bedroom

improvements than the one-family house; that it has the advantage of a small garden space, and, finally, they further advocate it because it retains the principle of home-ownership.

The row house, however, has distinct disadvantages as compared with the garden apartment. As noted above, it is much less economical of land than the Bayonne type, which covers 36% of the site area. The row house contains more non-rent paying space. The result is, that the garden apartment gives to the wage-earner a five-room apartment at about the same cost as a four-room row house. This difference between four and five rooms is not 25%, it should be pointed out, but means *50% or 100% difference in bedrooms*. The real measure of the standard of living in a home is the number of bedrooms. What gives to the American wage-earner's five and six-room home so striking a superiority over the three and four-room standard of the European worker is the greater number of bedrooms.

The bearing on housing policy of the excessive cost of the row house, as compared with the garden apartment, is not clearly enough appreciated. Under present conditions, when even the garden apartment is beyond the means of the lower-paid workers, the insistence of many housing experts that the row house is the only solution for wage-earner's housing, seems somewhat arbitrary.

As to the merits of the individual garden of the row house, one may question whether it is not over-rated. The fact is, that many families have neither the desire nor the energy to adopt gardening as a side-issue, and in consequence the garden of the row house often degenerates into the well-known "back yard" —a waste of expensive land, unkempt and obnoxious. The garden can be used only a few months in the year; and, in any case it is no substitute for the second or third bedroom whose cost it equals.

However, the greatest defect of the row house is that it is an inferior type of architecture. This is on account of its deficiencies in daylight and ventilation in the rooms, and because of its monotonous, depressing appearance. As the report of the Committee on Community Planning of the American Institute of Architects for 1925 observes, the row house of the Philadelphia type "was planned to fit the requirements of (the excessively narrow) lots rather than to serve the uses of tenants." The real value of the row house in allowing home-ownership can be offset in the apartment by co-operative ownership. The possibilities of

co-operative ownership in industrial housing are big indeed; both on the social and the financial sides, co-operative ownership may well prove to be the next important advance in housing technique. At Bayonne, however, it was not thought desirable to carry the first experiment so far, and the apartments are rented to the wage-earners.

Economy of operation

Coming now to the matter of operating cost, it is evident that the garden apartment is economical in operation. Since its production cost is lower, it has the benefit of lower carrying charges. The upkeep also is lower, as explained in previous pages.

The economy of the garden apartment may be best summarized by stating that it effects a saving of about a fifth to a third over its nearest competitor which is the speculative builder's apartment houses with rooms of the same size. And, as compared with the individual or row house in which the tenant provides his own heat and hot water, the Bayonne apartments are much more economical.

A new type of management

As to the vital factor of management, this Bayonne group of garden apartments enjoys greater efficiency and economy in its operation by a small force of janitors, firemen and cleaners, under the supervision of an executive who is experienced in real-estate management, than would be the case if it were split into 149 small unit houses with 149 heating plants and 149 hot-water heaters, all maintained by 149 families.

It may be well to point out here that the garden apartment in industrial housing requires an entirely different type of management from the ordinary tenement house property. Just as the garden apartment itself is superior to the old type of tenement as a motor car is superior to an ox-team, so is its management a new conception. Proper management of the garden apartment is based on business principles in which the good-will of the tenants is paramount. One often hears the complaint that tenants in tenements are incapable of good-will, but, if we be honest, can we say that the usual tenement is a fit object of good-will? And is the typical tenement management, vainly

struggling with the problem of upkeep in a property which has depreciated beyond the point where decent maintenance is possible, and, at the same time exacting higher rents—is management such as this likely to arouse charitable feelings? Under enlightened administration, nearly all the usual difficulties of managing tenement property disappear or become unimportant. The long experience of the City and Suburban Homes Company of New York City, and the results obtained in the Metropolitan Life Insurance Company's garden tenements, as well as in the Bayonne housing, are conclusive on this point. They prove that a big majority of the tenants respond to their environment, and create thus a powerful public opinion in favor of order. The few backward individuals soon come to obey public opinion, backed by the tactful reminder of the management that rents are much higher elsewhere. In the Metropolitan Life Insurance Company's housing the 12,000-name waiting list is significant in this connection.

Furthermore, the design of the garden apartment is an effective aid to good management. With its open plan, a stream of daylight is turned on every window, fire-escape and entrance, searching out the slightest infraction of the rules, or any slovenly housekeeping, holding them up to the public gaze and to the eye of the manager. There are no dark recesses in the buildings where filth can collect through the carelessness of either management or tenants. By good planning the untidy back yard and clothes lines for laundry are removed. In industrial housing high standards of architecture are essential to good management. And good management is essential to economy.

Rentals in the Bayonne housing

As a result of the economy of design, the rentals in the Bayonne Housing Corporation's apartments are $10.25 a room a month on the first, second and third floors, $9.75 a room a month for apartments on the fourth floor, and $9.00 a room on the fifth floor. These rentals include the bathrooms, and also, as explained above, steam heat, hot water and janitor service, worth at least $2 or $3 a room a month more.

This schedule of charges brings a modern four, five or six-room home within the means of the better paid wage-earner's family. The most that a wage-earner should be expected to pay in rent is from one-fifth to a quarter of his income, and before

A living room in a garden apartment home

the war the proportion was usually much lower than that, rarely more than 15%, and often even lower.

Architectural merits — the plan

But the greatest merit of the garden apartment is, that it offers the wage-earner an ideal home. Economy and efficiency, essential as they are in industrial housing, will not alone suffice unless the housing is humanly attractive and personal, for these are the qualities which create the ideal home. Some understanding of the architecture of the garden apartment is therefore desirable.

The plan is the basis of architecture, and never was this truth more evident than in the case of the garden apartment. The most striking characteristic of its plan is openness—openness which allows a maximum of daylight in the buildings, circulation of air and garden space. Specifically, the openness of the Bayonne plan is indicated by the fact that the buildings cover only 36% of the area of the site, whereas the older types of tenement usually cover 70% or 80% or even more. In Bayonne nearly two-thirds of the plot is devoted to lawns and gardens. As a result there is ample space for fore-lawns along the streets, and, for its most important feature, a huge centre garden which extends the whole length of the block. The openness has the additional merit of allowing the buildings to be isolated, in contrast to the usual practice of not separating them.

Such openness of plan requires large-scale design, in which the city block, taken as a whole, is the proper unit. At Bayonne the experiment took in only about one-half of a long city block, a plot fronting on three streets, East 11th and East 12th Streets and Avenue "E." This size proved sufficient to demonstrate the efficiency of large-scale planning, not only in respect to ideal architecture, but also as regards economy of production cost, which, as pointed out in previous pages, necessitates large-scale operation.

The houses provide homes for 149 families, generally in four, five and six-room apartments. Each apartment has a fully equipped bathroom, and the six-room apartments have, in addition, a shower-bathroom, as will be explained later.

Five buildings were planned, of which four are on a unit plan, and are typical of the architectural ideal. These typical unit buildings house 26 families each. The fifth building, fronting

A dining room

principally on Avenue "E" and located at the end of the group, has an irregular plan, due to the fact that Avenue "E" cuts the two side streets at an angle.

It should be noted here that such openness of plan is not merely an artistic fancy as might be thought, but has instead a sound basis in economy. The big saving of the garden apartment in cubic volume of building, as compared with older types, has been explained above. The point of this saving in its relation to openness is, so to speak, that it serves to put the excess space outside the building where its cost, being only land cost, is comparatively little. A further illustration of the economy of open planning, leads into an extremely complicated discussion of the technique of architectural planning, dealing with the relationship of land value to the percentage of site area covered by building. It may be stated, however, that when the building covers too high a percentage of area, it inevitably becomes more complicated and more wasteful of space; and that, in attempting to crowd too many rooms into an apartment plan on a given site, a point is reached where each additional room makes the cost of the building higher than the income from that room will pay for. In other words, the theory held in real estate circles that every possible room must be crowded into a plan is subject to the law of diminishing returns. Not only has the practice caused huge waste of building volume, but it results in an even worse error, namely, that of creating a large percentage of undesirable rooms—rooms badly located, dark and poorly ventilated, which hurt the rental value of the building.

This plan arrangement brings back daylight and circulation of air into city life. Every apartment has cheerful, sunny rooms, with two or three exposures; the rooms are never more than two deep, the apartments extending through the building, giving thus to all rooms, cross-ventilation; and a large number of the bedrooms are corner rooms. Living rooms and dining rooms are separate from the bedrooms, and the kitchen is also isolated; nevertheless, the plan ensures ease of operation for the housewife. This arrangement, together with the provision of the entrance foyer, of separate stairways serving only three apartments on a floor, is conducive to privacy. The wall spaces, and the door and window openings in the rooms allow convenient placing of furniture. The excellence of the kitchen and bathroom equipment has been noted above. The

Bedroom with extra bathroom in a six-room apartment

apartments consist generally of four, five and six rooms each, with bathroom and with bathroom and shower-bathroom in the six-room apartment.

One innovation is the bedroom with extra bath in the six-room apartments. It is located near the entrance, and forms a separate apartment within the apartment, so to speak. This accommodation was planned for those numerous families who share their home with relatives or parents, or with grown sons or daughters, who require a little separation and privacy, or who reduce their living expenses by taking one or two "roomers" who are not members of the family. These cases are frequent, and unless they are properly arranged for in the planning they are apt to cause crowding and personal friction.

In the cellar of each building is a room for baby carriages.

The garden environment

All these practical needs and the human and social essentials in housing are made dramatic by architecture and gardening. After all, the finest feature of the garden apartment is its big-scale environment of beauty. What a contrast to the slum does the Bayonne setting present! Its influence in the lives of those who dwell in it, particularly on children, can not be exaggerated.

But the finest part is the great interior garden. It is 335′ long, including playground, and it varies in width from 52′ to 104′. From every apartment there is an outlook over green lawns, planted with trees, shrubs and flowers—the life of growing things in the heart of the industrial city. The rear apartments jut out into this great garden, and what a different outlook does the housewife enjoy, as contrasted with the view from the rear of a typical city tenement over dark, foul backyards and courts, over dilapidated fences and cheerless pavements clogged with rubbish—a scene whose sole decoration is the public display of private laundry! In the Bayonne plan there are no courts. The "courts" are really only shallow alcoves in the garden, 65′ wide.

On the street front, the Bayonne buildings are set back from the sidewalk and are elevated on a terrace a few feet high, which is faced with a low retaining wall of brick. This provision, incidentally, is a practical necessity, due to the need of raising the buildings high enough to allow a proper fall for drainage into the street sewers. On the terrace level are the fore-lawns, planted, and traversed with flagstone paths which lead to the

Rear view of a garden apartment

entrances. Each building is stepped up in the centre, thus giving variety to the mass. What a change is this from the unbroken street wall of nearly all city housing, monotonous and forbidding as a prison!

The playground

Another novelty at Bayonne is the provision for the play-spirit of children. At one end of the great garden, and walled off from it, is a small playground for the little children. It is equipped with sand piles, small swings and a carrousel, and has a little comfort station attached. On the stucco wall facing the playground, are painted decorations of Humpty-Dumpty and other characters in child-lore, while the rear wall is an architectural feature, consisting of a fountain set in a niche framed with arch and columns, which forms a center of interest at the end of the main axis of the garden. This playground takes the child out of the streets, where our enlightened twentieth century sends him to play under the wheels of the motor cars. The Bayonne plan allows him to enjoy himself in safety, guided by a trained attendant, under the eyes of the mothers. (Incidentally, the services of a play teacher costs only a few cents a family a week—less than the price of a single ticket to the moving pictures—during the seasonable part of the year.)

What a fine setting does the Bayonne Housing Corporation furnish for the child to grow up in. Cheerfulness, space, sunlight, fresh air, a garden with growing things and flowers—and best of all, a playground!—at once an inspiration and an outlet for youthful energies! In Bayonne the young wage-earner can grow up knowing that in this world there are actually such things as birds and lawns and trees and flowers.

Will an architect be believed when he asserts that the bringing of beauty into city tenements is by far the greatest advance in the new housing standards at Bayonne? Is there any greater economy in housing than the social value of a beautiful environment? And it should be remembered that in the present day in the crowded districts of New York City people are beginning to pay as high for the privilege of living in the antiquated, depreciated, dark, insanitary, "cold-water" tenements as they would for a real home in the Bayonne garden apartments. The Bayonne garden apartments give to the wage-earner a home worthy of modern ideals.

Playground for the small children located at one end of the great garden

CHAPTER III

The Bayonne Housing Corporation

THE Bayonne Housing Corporation, as explained in the introductory chapter, was founded by a group of the leading industries at Bayonne, at the instance of the Chamber of Commerce, to stimulate the production of better housing for wage-earners. Its beginnings date from the World War, when, on October 4, 1917, the Bayonne Chamber of Commerce authorized the appointment of a special committee to examine the local housing situation and to make recommendations leading to action.

The Committee as appointed by President Van Buskirk consisted of Mr. C. J. Hicks, of the Standard Oil Company of New Jersey, Mr. J. H. Mahnken and Mr. George E. Keenen, both of Bayonne, and Mr. W. M. Cosgrove, General Manager of the American Radiator Company. The success of the undertaking is ascribed to Mr. Hicks by his associates. It was Mr. Hicks' vision and persistence through years of discouragement which finally put the project through.

As has been stated in the introductory chapter, the occasion for taking concerted action was the unsatisfactory situation in housing in Bayonne. Wage-earners found living conditions very unsatisfactory. The houses available were generally of a poor grade—obsolete, depreciated, "cold-water" flats of frame construction. The expansion of the big industrial plants was encroaching on the housing areas, and property owners, who expected to sell at any moment, were not inclined to keep their property in good repair.

The Committee of the Chamber of Commerce carefully surveyed the situation, and covered it thoroughly in a report of November 17, 1917. Their report was accepted by the Chamber of Commerce at a meeting held in the following January, when the Committee was continued and asked to proceed with remedial action.

This first report of the Committee is a noteworthy document. Particularly significant is that part of it which, in proposing

definite measures of relief, at the same time lays down the fundamental principles of industrial housing. First, the report goes to the root of the whole complicated subject by emphasizing the essentials of durable construction, and of daylight, ventilation, garden and recreation space in the architectural design. To quote the report: "We believe that the only plan by which apartments can be provided will be an apartment house or a modified form of tenement house containing not more than fifty apartments. Such a building should be of slow-burning construction with fire-proof stairways, and should provide ample light for every room, and sufficient ground should be left free to provide adequate air space and attractive surroundings. It should be provided with a central heating plant for heat and hot water. The kitchens should be heated and equipped with gas stoves and laundry tubs. The entire building should be equipped with shades, screens, ash and garbage cans. Each apartment should be provided with separate and complete bath room equipment. Playground, and if possible, a small additional park, should be provided adjacent to the building for the exclusive use of the tenants. The main purpose in the erection and operation of such a building should be to demonstrate that it is possible to provide satisfactory living accommodations for working men at a reasonable rental and as a business proposition that will net five to six per cent." It would be difficult to find, in a few words, a clearer statement of the policy of housing in its social, architectural and financial relationships.

Following this enlightened statement of principles is the Committee's recommendations for definite action. They are here given in full as a model statement of a practical housing program:

1—That an attempt be made to provide model apartments as above outlined for one hundred families of Bayonne wage-earners as a practical demonstration that will lead to further provisions of a similar nature.

2.—That the Bayonne industries and business men be invited to provide $100,000 as working capital to make possible the carrying out of the provisions of this recommendation.

3.—That the corporations and individuals furnishing this capital be advised to organize a corporation to be known as the Bayonne Housing Corporation, a majority of whose directors shall be residents in Bayonne. This Company to construct two buildings to house approximately fifty families each and to

operate them on the basis of attempting to pay five to six per cent dividends after the payment of all maintenance and fixed charges, and the setting aside of the proper depreciation fund.

4.—That in carrying out this purpose the Company engages the services of some architect who is expert in tenement house construction, and preferably one who is generally recognized as an architect interested in the housing of working men.

5.—That a tract of land be secured which is within walking distance of the largest number of industries and that this tract be of sufficient size to provide for modern dwellings with ample light and air space, playground, and opportunity for the erection of additional houses later.

6.—That the Company be organized on the basis of one hundred shares of stock at par value of $1000 each, and that for each share of stock paid for, the stockholder shall be entitled to have first claim on one apartment for rental to a wage-earner in his employ.

7.—That the rental of these apartments be restricted to wage-earners.

The whole subsequent seven years' history of the Bayonne movement was a struggle to attain these enlightened standards in practice. To that end, early in the year 1918, and only a few months after the special Committee of the Bayonne Chamber of Commerce had rendered its first report, the Bayonne Housing Corporation was organized, although the date of official incorporation is April 2, 1919.

The Bayonne Housing Corporation operates under the usual New Jersey charter for business corporations. In this case, in order not to handicap the work of pioneering, the charter was purposely drawn to give it the broadest possible powers, particularly with reference to real estate operations and building construction. However, the social and public-spirited side of the undertaking is clearly expressed in Article III of the By-Laws, which limits the dividends on the common stock to six per cent.

Originally the capital was $250,000, consisting of one thousand shares of cumulative five per cent preferred stock of $100 par, and one thousand eight hundred shares of common. In March, 1924, the capitalization was changed to $2,000,000, entirely of common stock. Stock is held in the name of the individuals and the industrial organizations.

The Bayonne Housing Corporation has the usual corporate organization, with officers and directors. Since it is an educa-

tional undertaking, carrying out extensive experiments in the first years of its existence, the officers and directors serve without pay.

After its organization in 1918, the years following were spent in careful examination of the situation and in a long study of the various types of industrial housing, made in order to determine which one was most applicable to the conditions at Bayonne. The extraordinary upset in economic conditions which followed the World War, particularly the sharp rise in costs of construction and building finance, created almost insoluble problems. It was not until conditions had become somewhat more normal that the course seemed more clear to the sponsors of the experiment. Then, as a result of this long preparation, the Bayonne Housing Corporation in January, 1924, commissioned Mr. Andrew J. Thomas, architect, to undertake the design of this, their first group of five garden apartments, and to supervise the construction work.

Ground was broken for the foundations in the following month. The project suffered from a delay in the Spring of 1924, due to the need of removing the unnecessary legal handicaps mentioned in the previous chapter on economics, which amounted to at least five per cent of the construction cost. As soon as the necessary amendments to the State tenement law and to the local building code could be secured, the project was rapidly completed and the first building was ready for tenants in December, 1924. The other structures were soon finished, and, in 1925, seven years after the Committee of the Chamber of Commerce had made its first report, the principles and standards of industrial housing which the Committee, under the leadership of its Chairman, Mr. C. J. Hicks, had so ably formulated, were realized in this group of apartments.

The demonstration of ideal wage-earners' housing now stands completed. It proves successful in the three essentials—economic, social, architectural. The garden apartments of the Bayonne Housing Corporation give the average thrifty wage-earner an ideal home at a price which he can afford.

The Bayonne apartments are now filled with tenants who are enjoying homes finer than anything they had ever hoped for. They are delighted with the garden setting, and when they see their children romping in the play space, in the sunshine, in safety, a heavy load drops off their shoulders.

Thus is reborn something of the older, freer sociable life of

early Bayonne, the life of those simple old days when Bayonne was a little American town, like many another, built in the familiar pattern of small separate houses and quiet streets, before the coming of industry. Only, the rebirth comes in a different form, in a new age. The Aladdins of industry who transformed Bayonne are thus completing their task. This is the significance of the work of the Bayonne Housing Corporation—namely the development of the highest type of industrial housing for rental purposes. Other industrial centers may well profit by its example.